

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/003588

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, MEDLINE, BIOSIS, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| X | KITCHING RICHARD ET AL: "Coordinate gene expression patterns during osteoblast maturation and retinoic acid treatment of MC3T3-E1 cells." JOURNAL OF BONE AND MINERAL METABOLISM. JAPAN 2002, vol. 20, no. 5, 2002, pages 269-280, XP002286916 ISSN: 0914-8779 abstract | 1-4, 14-34 |
| Y | tables 1-3 ----- -/-- | 5-13 |

☒ Further documents are listed in the continuation of box C.

☐ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

6 July 2004

Date of mailing of the international search report

06/08/2004

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| P,X | EELEN GUY ET AL: "The effects of 1alpha,25-dihydroxyvitamin D3 on the expression of DNA replication genes." JOURNAL OF BONE AND MINERAL RESEARCH, vol. 19, no. 1, January 2004 (2004-01), pages 133-146, XP009033011 ISSN: 0884-0431 (ISSN print) the whole document | 1-4, 14-34 |
| Y | CAPPELLEN DAVID ET AL: "Transcriptional program of mouse osteoclast differentiation governed by the macrophage colony-stimulating factor and the ligand for the receptor activator of NFkappaB" JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 277, no. 24, 14 June 2002 (2002-06-14), pages 21971-21982, XP002286917 ISSN: 0021-9258 abstract; figures 3,4 | 1-34 |
| Y | BECK GEORGE R JR ET AL: "Gene array analysis of osteoblast differentiation" CELL GROWTH AND DIFFERENTIATION, vol. 12, no. 2, February 2001 (2001-02), pages 61-83, XP002286918 ISSN: 1044-9523 abstract; table 1 | 1-34 |
| Y | VAES BART L T ET AL: "Comprehensive microarray analysis of bone morphogenetic protein 2-induced osteoblast differentiation resulting in the identification of novel markers for bone development." JOURNAL OF BONE AND MINERAL RESEARCH, vol. 17, no. 12, December 2002 (2002-12), pages 2106-2118, XP009032948 ISSN: 0884-0431 (ISSN print) abstract | 1-34 |
| Y | SETH ARUN ET AL: "Coordinate expression of novel genes during osteoblast differentiation" JOURNAL OF BONE AND MINERAL RESEARCH, vol. 15, no. 9, September 2000 (2000-09), pages 1683-1696, XP009033034 ISSN: 0884-0431 abstract page 1693, right-hand column, last paragraph | 1-34 |

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| P,X | DE JONG DIANA S ET AL: "Identification of novel regulators associated with early-phase osteoblast differentiation." JOURNAL OF BONE AND MINERAL RESEARCH: THE OFFICIAL JOURNAL OF THE AMERICAN SOCIETY FOR BONE AND MINERAL RESEARCH. UNITED STATES JUN 2004, vol. 19, no. 6, June 2004 (2004-06), pages 947-958, XP009033033 ISSN: 0884-0431 published online Feb. 2004 the whole document | 5-13 |
| Y | TEZUKA KEN-ICHI ET AL: "Stimulation of osteoblastic cell differentiation by Notch" JOURNAL OF BONE AND MINERAL RESEARCH, vol. 17, no. 2, February 2002 (2002-02), pages 231-239, XP009033029 ISSN: 0884-0431 abstract | 5-13 |
| A | MCGALL G ET AL: "LIGHT-DIRECTED SYNTHESIS OF HIGH-DENSITY OLIGONUCLEOTIDE ARRAYS USING SEMICONDUCTOR PHOTORESISTS" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA, NATIONAL ACADEMY OF SCIENCE. WASHINGTON, US, vol. 93, 1 November 1996 (1996-11-01), pages 13555-13560, XP000775688 ISSN: 0027-8424 cited in the application the whole document | 28-45 |

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Box II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 7, 9 and 11 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.